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ABSTRACT

This paper applies the management science tool of break-even analysis to determine the costs of implementing an off-campus bachelor degree completion program at a four-year private liberal arts college. The first section describes break-even analysis which, in this application, is calculated by dividing the total annual cost for a cohort of students by the annual tuition paid by one student and then applied to decisions concerning off-campus location program expansions or terminations. The next section describes the particular organizational setting for this application which is Warner Southern College (Florida), a small four-year private liberal arts college, and specifically, the college's School of Adult and Continuing Education's major in Organizational Management. The third section applies break-even analysis to the program which involved developing a spreadsheet to assist in determining the break-even point for each location. As a result of the study an administrative decision was made to continue offering the program at all seven locations. (DB)

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AN APPLICATION OF BREAK-EVEN ANALYSIS TO DETERMINE THE COSTS ASSOCIATED WITH THE IMPLEMENTATION OF AN OFF-CAMPUS BACHELOR DEGREE COMPLETION PROGRAM

by

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BIOGRAPHICAL SKETCH

Brian C. Satterlee currently serves as professor of business and dean of the School of Adult and Continuing Education at Warner Southern College. Warner Southern College, located in Lake Wales, Florida, is a private, four-year liberal arts institution. Prior to joining Warner Southern in 1992, he was director of Technical and Industrial Education at Seminole Community College. He received his doctorate in Occupational Education from Nova Southeastern University, has published nationally within his discipline, presented papers at professional conferences and consulted with numerous organizations on topics related to the development, implementation, and evaluation of educational programs.

THE APPLICATION OF BREAK-EVEN ANALYSIS TO DETERMINE THE COSTS ASSOCIATED WITH THE IMPLEMENTATION OF AN OFF-CAMPUS BACHELOR DEGREE COMPLETION PROGRAM

Introduction

The purpose of this paper is to apply the management science tool of break-even analysis in determining the costs of implementing an off-campus bachelor degree completion program at a four-year private liberal arts college. The paper will be organized as follows: (1) description of break-even analysis; (2) organizational setting for application; and (3) the application of break-even analysis to the organization.

Description of Break-Even Analysis

Break-even analysis is a widely used tool of management science. The purpose of the tool is to help decision-makers determine the values of a decision which promote the lowest cost or highest profits. These values are found by asking the question, at what point does an operation's expenditures equal it's revenue? The break-even point is then used in the decision process to maximize profits or minimize costs. The generally accepted formula used to calculate the break-even point is: a break-even point is equal to the total annual costs divided by the annual volume. Thus, a break-even point, in this paper, will be calculated in the following manner: the total annual cost for a cohort of students will be divided by the annual tuition paid by one student. This information will then be used to determine the following: which locations should continue, which locations should discontinue, and which locations should be selected for program expansion.

Organizational Setting

The organization under consideration for this paper is Warner Southern College, a regionally accredited, small four-year private liberal arts college located in Lake Wales, Florida. The academic aspect of the college is organized into two separate areas: programs offered primarily during daytime hours for traditional age residential students (School of Arts and Sciences), and programs offered primarily during evening hours to mid-career working professionals attempting to complete the requirements for the bachelors degree (School of Adult and Continuing Education). While the application of management science tools is important to both academic aspects of the institution, this paper will be limited to the application of break-even analysis for the School of Adult and Continuing Education.

The adult degree completion program of the School of Adult and Continuing Education was initiated by the college several years ago to: (1) meet the growing educational need for working professionals to obtain the bachelors degree; and (2) provide a financial balance to offset decreasing numbers of traditional-age daytime student enrollments. The results of a need analysis conducted by the college in 1989 indicated that a significant number of working professionals, who have completed at least sixty hours of transferable college credit, would enroll in a bachelor degree completion program offered at times and in places convenient to the student.

The bachelor of arts in Organizational Management is an innovative degree completion program for adults who possess at least sixty hours of transferable college credit and who have work experience. Organizational Management is designed to provide

the opportunity for individuals to complete the program in twelve to twenty months, while maintaining full-time employment. The course work is scheduled over a fifty-two week period, which normally includes one evening per week and one Saturday per month, for a total of twenty-four contact hours per course. Once admitted to the program, the student is assigned to a cohort, which stays together for the twelve-course professional core (36 credits). Upon completion of the professional core, the student attempts to complete the remaining requirements for the degree by one of the following methods: (1) enrolling in courses offered by the college, or other local colleges; (2) testing, typically through College Level Examination Program (CLEP), the military DANTES program, etc.; (3) earning credits through portfolio assessment processes, i.e., prior learning assessment (PLA). For example, 128 credit hours are required to earn the degree. If a student transfers sixty-fours credit hours into the program, and completes the professional core of 36 credit hours, s/he needs to complete 28 credit hours to earn the degree. Any combination of the above methods can be used to fulfill the degree requirements.

The program is based on principles of adult education that recognize the importance of experiential learning. It provides professionally relevant course work in an accelerated learning environment. The program is suitable for those seeking career advancement and/or quality preparation for graduate school.

Initially, the program enrolled seventy-five students at the main campus and at an off-campus site located in Orlando, Florida. Currently, more than 240 full-time students are enrolled in ninety-five courses offered at seven different locations within a 100-mile radius of the main campus.

Break-Even Analysis Application

As previously mentioned, the break-even point will be calculated in the following manner: the total annual cost for a cohort of students will be divided by the annual tuition paid by one student. This information will then be used to determine the following: which locations should continue, which locations should discontinue, and which locations should be selected for program expansion.

The process used to apply break-even analysis to determine the costs associated with the implementation of an off-campus bachelor degree completion program is as follows: (1) determine the locations to be evaluated; (2) determine the projected annual costs of implementing one cohort of students for each site listed; (3) divide the annual projected annual costs by the annual tuition paid by one student. This is the break-even point for that location; (4) decide whether to continue or discontinue implementing the program at the particular location.

A spreadsheet, located on the next page, was developed to assist in determining the break-even point for each location. Total projected annual costs per cohort for each location were calculated. The total projected annual costs were categorized as either personnel or expenditures. Finally, the total projected annual costs were divided by the annual tuition paid by one student, $7,500 dollars. The break-even point for each location was determined, as well as the total break-even point for the program.

As a result of this study, an administrative decision was made to continue offering the program at all seven locations.

BREAKEVEN ANALYSIS FOR ADULT & CONTINUING EDUCATION, BUDGET
ORGANIZATIONAL MANAGEMENT MAJOR
WINTER 1996

	LWA	MEL	FTP	ORL	DEL	TYT	LEE	TOTAL
PERSONNEL								
administrative	2587	2587	2587	2587	2587	2587	2587	18109
secretarial	1260	1260	1260	2116	2116	2116	1260	11388
recruiter	3484	3484	3484	2987	2987	2987	4000	23413
fulltime faculty	5049	5049	5049	2987	2987	2987	0	24108
adjunct faculty	3456	3456	3456	3456	3456	3456	3456	24192
registrar services	1730	1730	1730	1730	1730	1730	1730	12110
subtotal	17566	17566	17566	15863	15863	15863	13033	113320
EXPENDITURES								
promotional materials	667	667	667	667	667	667	667	4669
advertising, newspaper	1334	1334	1334	4000	4000	4000	1334	17336
advertising, radio								
refreshments	28	28	28	28	28	28	28	196
misc printing	222	222	222	222	222	222	222	1554
office supplies	222	222	222	222	222	222	222	1554
curriculum	333	333	333	333	333	333	333	2331
professional services	20	20	20	20	20	20	20	140
postage	278	278	278	278	278	278	278	1946
professional development	112	112	112	112	112	112	112	784
program development	250	250	250	250	250	250	250	1750
scholarships	1111	1111	1111	1111	1111	1111	1111	7777
travel	1334	1334	1334	1334	1334	1334	1334	9338
classroom rental	0	4500	0	7224	3000	3000	2400	20124
telephone	556	556	556	556	556	556	556	3892
contract wages	56	56	56	56	56	56	56	392
maintenance	28	28	28	28	28	28	28	196
registration expenses	0	300	300	300	300	300	0	1500
promotional meetings	228	228	228	228	228	228	228	1596
plant/equipment	1000	0	0	1000	175	175	0	2350
subtotal	5778	9578	5078	13302	8253	8253	7178	57420
TOTAL	48689	56289	47289	62997	52899	52899	42423	363485
BREAKEVEN @ 7500	6.5	7.5	6.3	8.4	7.1	7.1	5.7	48.5